Claims

1. An isolated nucleic acid sequence comprising at least a DR-4 nuclear receptor binding site wherein said nucleic acid sequence functions as trancriptional enhancer of the 5-aminolevulinic acid synthase gene.

2. The nucleic acid sequence of claim 1 with the proviso that said sequence does not comprise a sequence set forth in Seq. Id. No. 8 to 10.

3. The nucleic acid sequence of claim 1 or 2, wherein said sequence comprises the sequence set forth in Seq. Id. No. 1.

4. The nucleic acid sequence of claim 1 or 2, wherein said nucleic acid sequence further comprises a nuclear factor 1 binding site (NF-1) and/or a DR-5 nuclear receptor binding site.

5. The nucleic acid sequence of anyone of claims 1 to 4, wherein said nucleic acid sequence mediates chemical compound induced transcriptional activation.

6. The nucleic acid sequence of claim 4, wherein said chemical compound is a candidate compound for therapeutical use or a drug.

7. The nucleic acid sequence of anyone of claims 1,2 and 4-6, wherein said sequence comprises a sequence selected from the group consisting of Seq. Id. No. 2-7.

8. A genetic construct comprising a nucleic acid sequence of anyone of claims 1-7 operably linked to a nucleic acid encoding a reporter molecule.

9. The genetic construct of claim 8, wherein said reporter molecule has an enzymatic activity.

10. The genetic construct of claim 9, wherein said reporter molecule activity can be detected by colorimetry, radioactivity, fluorescence or chemiluminiscence.

11. The genetic construct of anyone of claims 8-10, wherein said reporter molecule is selected from the

group consisting of luciferase, beta-galactosidas, chloramphenicol acetyltransferase, alkaline phosphatase and green fluorescent protein.

12. A method for testing compounds for modulation of heme and/or P 450 cytochromes synthesis comprising contacting suitable cells comprising a genetic construct according to claims 8-11 with a test compound and detecting enhanced or repressed expression and/or transcription of the nucleic acid sequence encoding the reporter gene.

13. The method of claim 12, wherein said compound is a candidate drug for therapeutical use or a drug.

14. The method of claim 12 or 13, wherein enhanced expression of the nucleic acid sequence encoding the reporter gene is detected by a colorimetry, fluorescence, radioactivity or chemiluminiscence.

15. The method of anyone of claims 12-14, wherein enhanced transcription of the nucleic acid encoding the reporter gene is detected by quantitative PCR.

16. The method of anyone of claims 12 to 15, wherein said cells are Leghorn Male Hepatoma (LMH) cells, other hepatoma cells, monkey kidney cells (CV-1, COS-1) or human kidney cells.

17. Use of a nucleic acid of anyone of claims 1-7 for the testing of chemical compounds as modulators of heme and/or P450 cytochromes synthesis, in particular a sequence selected from the group consisting of Seq. Id. No. 8 to 10 and 39.

18. Use of a genetic construct of anyone of claims 8-11 for the testing of chemical compounds as modulators of heme and/or P450 cytochromes synthesis.